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OSHA LIANG/MI ONE HOUSTON CENTER SUITE 2800 HOUSTON, TX 77010			RICHARD, CHARLES R	
			ART UNIT	PAPER NUMBER
			1712	

DATE MAILED: 05/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/647,737

Applicant(s)

PATEL ET AL.

Examiner

C. R. Richard

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☒ Claim(s) 3,6,11 and 19 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3-16-05.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☒ Other: copy of WO 89/11516.

DETAILED ACTION

1. Applicant may wish to consider adding a verb such as "having" immediately after the phrase "drilling fluid" near the beginning of the first sentence of the Abstract to make the this sentence complete.
2. Applicant has made many helpful comments in the specification pointing out what is well known in the art; however, Applicant should consider rewording the statement made at page 4, lines 23 to 28 of the specification, because the current wording could be misconstrued as teaching that the compositions of the present invention are old in the art.
3. In order to minimize any later confusion by the public as to the scope of any claim issuing in this case, it is recommended that Applicant consider alternatives (as allowed by the original disclosure) for the terms "a dimer poly-carboxylic acid C12 to C22 fatty acid" and those for the corresponding trimer and tetramer. Applicant may consider using instead terms that might be somewhat clearer on their face such as "a polycarboxylic acid dimer of a C12 to C22 fatty acid", "a polycarboxylic acid trimer of a C12 to C22 fatty acid", etc.
4. It is of note that the rheology modifier and primary emulsifier called out by the claims are "overlapping components". That is, the materials called out as rheology modifiers are also emulsifiers. The Applicant even states this in the specification, where it is

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recited that the primary emulsifier may be a fatty acid or a polyamide (among others) and derivatives of these (see page 3, lines 4-8 of the specification). For purposes of examination, if a rheology modifier of a claim is called out in a reference, that reference will be taken to disclose an appropriate emulsifier at the same time.

5. As to claim 10, there is technically no antecedent basis for "the trimeric poly-carboxylic fatty acid" therein; further discussion on this issue is given below. Rewording of this claim is suggested.

6. Claim 9 uses the term "poly-carboxylic" twice with no preceding qualifier. In the first instance, it will be taken for purposes of examination on the merits that preceding qualifiers such as dimer, trimer and tetramer were intended since this was specifically called out in the earlier claims and this makes claims 9 and 10 consistent as far as this goes. This interpretation is consistent with the short hand Applicant apparently uses similarly in the specification. It is uncertain if Applicant intended to have the second instance at all, given that this is the only place in the claims or specification where this is done, and claims 10 and 16 are thus rendered ambiguous as a result.

Thus, for purposes of examination on the merits (only), it will be taken that Applicant meant what was written in claim 9 as it stands with the inclusion of the preceding qualifiers stated above; claims 10 and 16 will be handled considering this inconsistency when determining claim definiteness, but the inconsistency will be ignored for examination on the merits – the polyamide will be taken as polyacid based, that is.

This gives maximum effect to the choice of wording in the independent claim (claim 9) and Applicants' likely intent, thus speeding up overall prosecution. It is suggested that Applicant make appropriate amendment or statement of clarification on the record in his response to this action in any event.

7. The wording of claims 8 and 16 is taken to refer to an exact amount of each component and in the product by process sense as opposed to a mere ratio in the final product.

8. Claim 17 and claims 18-20 by dependency are written in Jepson format and are examined accordingly.

Claim Objections

9. Claims 3, 11 and 19 are objected to because of the following informalities: the claims contain the phrase "about 100%" which includes 100%, thus contradicting the limitation of both a continuous and a discontinuous phase being present. This is not the same situation as where an analysis of the components of a mixture happens to add up to a little over 100% due to experimental error of the measurements involved; here Applicant is making a specific statement as to composition without regard to any analytical technique. Appropriate correction is required.

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10. Claim 6 is objected to because of the following informalities: the claim depends from itself. Appropriate correction is required. For purposes of examination, it will be assumed that Applicant intended (as is almost certain) that this claim depend from claim 5.

Claim Rejections - 35 USC § 112

11. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

12. Claims 9-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, there is no mention in the specification of forming a polyamide from a polycarboxylic C12-C22 fatty acid and ethylenepolyamines as required in the claims as has been already noted.

Although a claim filed originally with an application may provide sufficient support for itself, this is not automatic. As MPEP § 2163 states (under heading I. A.): "the issue of a lack of adequate written description may arise even for an original claim when an aspect of the claimed invention has not been described with sufficient particularity such that one skilled in the art would recognize that the applicant had possession of the

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claimed invention.” One skilled in the art cannot determine if Applicant was in possession of the claimed invention until it is known what the claimed invention is. In this case, the issue boils down to the meaning “polycarboxylic C12-C22 fatty acid”. Is this a dimer, trimer, etc of a C12-C22 carboxylic acid, a C12-C22 fatty acid with more than one carboxyl group, or is this a typographical error? It does not appear that this can be determined with certainty from the specification and/or the originally filed claims – in fact, to confuse matters further, claim 16 (which depends from claim 9) drops the “poly” altogether.

13. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

14. Claims 9-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

As to claim 9, the scope of the claim as written is unclear. Is the “poly-carboxylic C12-C22 fatty acid” a fatty acid having more than one carboxyl group or a polymer of the carboxylic acid?

Given the choice of wording in claim 9 as written, it is uncertain what poly-carboxylic fatty acid Applicant is referring to in claim 10. Is it an acid rheology modifier, the acid residue in a polyamide rheology modifier or some excess acid carried over with a polyamide?

Similarly, it does not appear that the limitations of claim 16 are consistent with those of claim 9 from which claim 16 depends. Claim 9 requires that the polyamide be made from a poly-carboxylic C12 to C22 fatty acid not merely a C12 to C22 fatty acid as recited in claim 16; claim 16 then has a broader scope than claim 9 from which it depends.

The other claims here are rejected on the basis that they are dependent from claim 9.

Claim Rejections - 35 USC § 102

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

16. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Reddie et al. in US Patent 2,994,660. Reddie teaches a water-in-oil (invert) emulsion type drilling fluid (see column 1, lines 9-11). This fluid is formed using a polybasic fatty acid polymer and a polyamine and/or polyamino alcohol emulsifier and exhibits (according to the reference) “excellent rheological properties” (see column 2, lines 53-62).

The water phase may be made up using fresh water, water with various contaminants (such as oil field brine) or even sea water (see column 4, lines 20-32). The oil phase may be made up using either refined or crude oils or other hydrophobic inert fluids; it is stated that refined oils such as diesel oil or fuel oil are preferable (see

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column 5, lines 18-29). The water content of the combined oil and water phases is stated at being preferably between about 20 and 65 volume percent, but can be varied to about 10 to 75 volume percent (see column 4, lines 50-55) with the balance by volume being the oil (see column 5, lines 42-46) – the corresponding oil ranges being then about 35 to 80 volume percent and 25 to 90 volume percent.

The polybasic fatty acid may be a dimer or trimer of an unsaturated C12 to C24 fatty acid or mixtures of these dimers and trimers; examples of the C12 to C24 acids employed are (the C18) oleic, linoleic and linolenic acids (see column 6, lines 15-30). Generally, at least 2.5 and up to 30 pounds per barrel, preferably, 10 to 20 pounds per barrel of the fatty acid polymer is employed on the basis of finished, unweighted emulsion (see column 9, lines 66-70).

Also, 1 to 15 pounds per barrel of clay (especially bentonite) or a weighting material may be added (see column 5, lines 60-63). Barite may be used for weighting (see Example VI).

17. Claims 1, 3-6, 9, 11-14, 17 and 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by the disclosures in WO 89/11516. This document discloses an invert emulsion mud containing an emulsifier that may include a polyamide, a dimer acid and a solvent (see pages 2 to 3). The starting materials for the dimer acid are preferably C12 to C22 alkenyl monomeric fatty acids, such as (the C18) oleic and linoleic acids (see page 10). One particular fluid disclosed comprises 1-5 weight % of this emulsifier, 40-97 weight % hydrocarbon drilling oil (such as diesel oil) and 2-60 weight % brine

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(see page 4); note that given the density ranges of the materials involved, this fluid when viewed on the basis of the volume percentages of its components would be well within the limitations called out in claims 3-4, 11-12 and 19-20. It is further disclosed that such a fluid may contain viscosifiers (like oleophilic bentonites) and weighting agents (like barytes) (see page 4).

18. Claims 1, 3-7, 9, 11-14, 17 and 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Coates et al. in US Patent 4,941,983. Coates discloses a fluid loss additive for use in an invert emulsion mud; this additive may contain an oil, an amide-amine, and a dimer and/or trimer fatty acid (see column 2, lines 8-46). Starting materials for the dimer and trimer acids are C12 to C22 alkenyl monomeric fatty acids such as (the C18) oleic and linoleic acids (see column 2, line 66 to column 3, line 7). The amide-amine may be made by reacting one mole of diethylene triamine with 1 or 2 moles of C1 to C22 alkanolic acid or one mole triethylene tetraamine with 1 to 3 moles of C1 to C22 alkanolic acid with one specific example being diethylene triamine bis-oleyamide (see column 3, lines 46-55 and Example 2); note that according to the dictionary consulted by the Examiner, the term poly means "more than one", so a diamide or triamide can be termed a polyamide. The mud in which the additive is incorporated may contain an oleophilic clay and barites for weighting (see Example 1).

As to claims 3-4, 11-12 and 19-20 in particular, given the range of densities of the materials involved, Example 2 discloses compositions that meet the volumetric and other limitations of these claims. Also, note the disclosure of water as the dispersed

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phase being up to 40% of the inversion mud at column 2, lines 8-15, and that the oil may be diesel as given in Example 2, and also indicated as such at column 6, lines 45-50.

As to claim 7 in particular, if one takes ratios of 1:1 throughout (as is allowed), the disclosure of column 6, lines 51-62 translates into a polyamide concentration of 0.125 to 2.5 pounds per barrel and more preferably 0.25 to 1.25 pounds per barrel for the polyamide in a drilling fluid.

19. Claims 1 and 3-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Foley in US Patent 3,728,277. Foley discloses a water-in-oil emulsion composition suitable for use as a drilling mud (see column 1). The composition includes an imidazoline salt of a long chain fatty acid as well as a long chain aliphatic amido amine salt of a long chain aliphatic carboxylic acid (see column 1, line 72 to column 2, line 2 and column 3, lines 56-58).

The amido amine salt may be prepared by reacting a polyamine, such as diethylene triamine or triethylene tetramine with a C8 to C22 aliphatic monocarboxylic acid, especially a C12 to C18 acid as from tall oil, so as to form an amide condensation product (see column 3, line 69 to column 4, line 12). Foley gives method of preparation of the amide where the ratio of acid to amine reactants is about 2:1, and notes that substantially only primary amino groups will react (see column 4, lines 13- 21). Following the formation of the amide, excess carboxylic acid is added in proportion to the secondary amine groups present, thus forming the salt (see column 4, lines 25-31).

Note that this disclosure does allow for reaction of some secondary amino groups and formation of a triamide at times. In any case, a diamide can be regarded as a polyamide - the dictionary consulted by the Examiner gave the definition of "poly" as "more than one". Further, the polyamide of the present invention is described in the rejected claims as a condensation product of a C12 to C22 fatty acid and a polyamine; there is no mention that all amino groups must react. The addition of the excess acid can be regarded as addition of an emulsifier; Applicant effectively concedes this in listing fatty acids as possible emulsifiers on page 6, lines 6-9 of the specification. None of this is inconsistent with Applicants' specification.

The water-in-oil emulsions of Foley contain water or an aqueous electrolyte solution as the dispersed phase and an oleaginous material as the continuous phase (see column 4, lines 43-50). The aqueous dispersed phase may contain as much as 30% by weight inorganic salts of alkali or alkali earth metals (see column 4, lines 63-66). The oleaginous material may be chosen from a group including esters, ethers and mineral oils (see column 4, line 73 to column 5, line 9), as well as diesel fuel (see Example VIII (E)).

As to claims 3 and 4 in particular, given the densities of the materials involved, the disclosure on percentages of column 4, lines 43-57 and the rest of what has been pointed out here from Foley describes a composition meeting the volumetric and other limitations of these claims.

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20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

21. Claims 9-14 and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reddie et al. in US Patent 2,994,660 in view of the disclosures in WO 89/11516. The relevant disclosures of Reddie have been discussed previously. Reddie did not specifically disclose the use of an organophillic clay.

The use of an organophillic clay as a drilling fluid additive is well known in the art. Applicant admits this at page 8, lines 11-15 of the specification. This can also be gleaned from WO 89/11516 as explained in detail previously (based on the disclosure on pages 2 to 4 of this reference).

Thus, one of ordinary skill in the art would have been motivated to add an organophilic clay to the compositions disclosed in Reddie resulting in the fluids of the rejected claims.

22. Claims 1 and 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foley in US Patent 3,728,277 and in the case of claim 7, especially in view of Reddie et al. in US Patent 2,994,660. The disclosures of Foley and Reddie have been discussed in detail above. Foley does not disclose the exact concentration of the polyamide in claim 7 nor make a direct disclosure of the limitation (1:3 exact mole proportion) of claim 8.

The concentration range called out in claim 7 would have been obvious to one of ordinary skill in the art from the disclosures of Foley itself. That is, one of ordinary skill in the art knowing the disclosures of Foley would have been motivated to perform the routine work required to come up with this concentration range limitation in order to optimize the stability of the water-in-oil emulsions in question. This is particularly the case considering that a starting point could have been found in Reddie relating to the corresponding amount of polycarboxylic acid used in Reddie in a similar context (see column 9, lines 66-70 in Reddie).

The exact proportion of claim 8 would also have been (at least) obvious to one of ordinary skill in the art. As eluded to in a previous rejection, a small portion of the amide produced in Foley would have been a triamide, and Foley does disclose the use of diethylenetriamine and a C18 fatty acid (see column 3, line 69 to column 4, line 21).

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It is also of note that claim 8 is actually written in product by process form making only a comparison of resulting compounds necessary for purposes of examination. That is, the process of a product by process claim does not in itself distinguish its product for purposes of patentability and insufficient evidence has been presented by Applicant to show otherwise. As the Federal circuit has explained:

[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in a product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.

[Applicant] argues that even if the performance of a compound is comparable to that of the prior art, this fact does not necessarily imply that the structures are identical. We agree. We also agree that on the entirety of the record the PTO had correctly adduced a prima facie case, and that the burden had shifted to [Applicant], "to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985) (*internal citations omitted.*)

Foley teaches the same triamide that would result from the reaction/proportion set forth in claim 8; thus claim 8 is obvious over Foley.

Conclusion

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Reddie et al. in US Patent 3,127,343 discloses more or less the same compositions as the Reddie et al. patent cited above. Foley in US Patent 3,654,177 discloses more or less the same compositions as the Foley patent cited above. Stanphill in US Patent 2,873,253; Chappell et al. in US Patent 4,010,111; French et al. in US Patent 5,027,901; Nguyen et al. in US Patent 5,960,878; and Santhanam et

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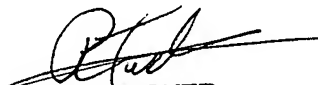
al. in US Patent 6,339,048 disclose compositions similar to those claimed in the present invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to C. R. Richard whose telephone number is 571-272-8502. The examiner can normally be reached on M-F, 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CR Richard


PHILIP TUCKER
PRIMARY EXAMINER
ART UNIT 1712